



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences**

In re Patent Application of

HARRIS et al.

Atty. Ref.: SCS-540-560

Serial No. 10/529,227

TC/A.U.: 1797

Filed: March 25, 2005

Examiner: N. Turk

For: CORROSION SENSING MICROSENSORS

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September 15, 2008

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

REPLY BRIEF

This Reply Brief is responsive to the Examiner's Answer mailed July 17, 2008 and the various new points of argument contained therein.

Pages 3-10 of the Examiner's Answer appear to mirror the 3rd and non-final Official Action in this application mailed October 16, 2007 (Paper No. 20071015). The Examiner's confirmation in the Examiner's Answer of the various admissions set out in the 3rd and non-final Official Action is very much appreciated. Beginning on page 11 of the Examiner's Answer, the Examiner purports to respond to each of the arguments set out in the Appeal Brief and for ease of review, Appellants will address each of these arguments in turn.

Appeal Brief Argument A. The Examiner fails to demonstrate where Kim teaches the claimed “thin film track following a path which includes a plurality of mutually inverted generally U-shaped bends”

The Examiner correctly restates Appellants’ argument in the first paragraph under Section A. In the second paragraph, the Examiner takes the position that he has “included the relevant recitation within the rejection,” presumably a reference to the non-final Official Action mailed October 16, 2007.

However, Appellants have pointed out that the Examiner does not identify any portion of the Kim reference which shows the claimed “path” which is followed by the “thin film track.” The burden is on the Examiner to identify any portion of the Kim reference which he believes meets the claim limitation. The Examiner’s continued refusal to meet his burden confirms the fact that the Examiner finds no portion of the Kim reference teaching thin film tracks “following a path which includes a plurality of mutually inverted generally U-shaped bends.” The Examiner’s reference back to the previous Official Action for support notwithstanding, at no point has the Examiner identified any actual portion of the Kim reference purportedly teaching the claimed “path.”

The Examiner does cite a portion of page 4, end of the 2nd paragraph of the 3rd non-final Official Action. This citation relates to the combination of the Kim and Ansuini references (“[f]urther, with regard to claim 1, . . . in order to save space.”). However, this citation does not indicate where the Kim reference teaches the claimed “path.”

Consequently, as noted in Appeal Brief Argument A, the Examiner has failed to meet his burden of identifying how or where the Kim reference teaches the specifically claimed “path” limitation and this failure is not cured in the Examiner’s Answer.

Appeal Brief Argument B. The Examiner fails to appreciate that Kim teaches away from the claimed “path which includes a plurality of mutually inverted generally U-shaped bends”

Again the Examiner restates Appellants’ arguments in paragraphs 1 and 2 under Section B on page 11 of the Examiner’s Answer. However, in the first paragraph on page 12, the Examiner suggests that Kim’s Figures 1 and 5, which show only straight thin lines 41, do not teach away from the usage of bends in the thin lines 41. Apparently, the Examiner’s rationale is that there is no disclosure in the Kim reference that “precludes the use of alternative form for the thin lines 41.”

However, the Examiner does not dispute that the disclosure in Kim is to use straight lines connecting the twodistributing units 50. The Examiner’s suggestion that there must be a disclosure in the Kim reference that precludes a bend in order for Kim to “teach away” simply is not the state of the law with respect to teaching away from a claimed invention. As noted in the *In re Fine* case, quoted in Appellants’ Appeal Brief, it is “error to find obviousness where references ‘diverge from and teach away from the invention at hand’.” The Examiner has cited no Federal Circuit or Board precedent supporting his position that, for a reference to teach away, it must also include not only a contrary disclosure, but some statement requiring only that contrary disclosure.

While the Examiner has previously admitted that “Kim does not disclose each bend has a minimum radius of curvature, which is greater than half the average width of the corrosive tracks” (the admission in the Examiner’s Answer, page 5, first full paragraph is appreciated), if Kim did not disclose straight lines 41, then the Examiner would have an argument that there is no contrary teaching. However, because Kim specifically teaches the use of straight lines, it does indeed teach away from the use of bent lines as required by the pending claims.

Because the Examiner has failed to provide any legal support for his unique position that a prior art reference which teaches away must include a teaching which “precludes the use of alternative form” for the contrary teaching, he has failed to rebut the basic point in the Appeal Brief, i.e., that the Examiner commits reversible error in ignoring the fact that the Kim reference teaches away from the claimed “path.”

Appeal Brief Argument C. The Examiner continues to fail to demonstrate where Ansuini teaches “a plurality of corrosive tracks”

Again the Examiner restates Appellants’ argument in the first paragraph under Section C on page 12 of the Examiner’s Answer. Appellants’ Brief also notes that Ansuini teaches **only** a single track between a pair of two terminals and thus fails to teach the claimed “plurality” of tracks connecting the two terminals.

While the Examiner goes on to argue that there is some reason for combining the references, this portion of Appellants’ Brief is directed to the fact that Ansuini does not

actually teach the claimed “plurality” of tracks. The Examiner does not appear to dispute this aspect of Appellants’ Brief.

Appeal Brief Argument D. The Examiner fails to appreciate that Ansuini teaches away from the claimed “plurality of corrosive tracks”

Again, the Examiner restates Appellants’ argument and then seems to ignore the issue. The fact that the Examiner says that he only cites Ansuini for teaching a serpentine-formed corrosive track, does not eliminate from consideration the fact that Ansuini teaches away from Appellants’ claimed combination of elements.

The Examiner does not dispute that Ansuini teaches only a single track between the disclosed terminals. The issue raised by this portion of Appellant’s Brief is not the fact that Ansuini fails to teach claim limitations (this is treated in Argument C as noted above), but the fact that, in teaching the Ansuini combination of elements, Ansuini teaches away from Appellants’ claimed combination.

As noted above, the Court of Appeals for the Federal Circuit has decided that prior art teachings which “diverge from and teach away from the invention at hand” is an indication that that prior art would lead one of ordinary skill in the art away from the present invention. Such teaching away from the claimed invention is a legal rebuttal to any *prima facie* case of obviousness. It is noted that the Examiner rejects all claims as being obvious in view of the Kim/Ansuini combination, either by itself or in conjunction with other cited prior art references.

As a consequence of the above, the Official Action and the Examiner's Answer simply ignores the fact that both Kim and Ansuini teach away from the independent claims and claims dependent thereon.

Appeal Brief Argument E. The Examiner provides no *prima facie* case of obviousness under 35 USC §103 in view of the Kim/Ansuini combination

Appellants make three separate arguments which traverse the rejection – first, in Section E.1, that neither the Kim nor Ansuini references teach the plurality of tracks following the claimed “path” between at least two common terminals. Second, Appellants note in Section E.2, that the Examiner fails to meet his obligation of providing an “explicit” analysis as to his rationale as to why one of ordinary skill in the art would pick and choose elements from the two references **and** then combine them in the manner disclosed only in Appellants' independent claims. Thirdly, because the Examiner fails to appreciate that both Kim and Ansuini teach away from the claimed combination of elements, which teaching comprises a complete rebuttal to any *prima facie* case of obviousness, even if one were made (and, as noted above, the Examiner fails to make out a *prima facie* case of obviousness).

With respect to the first argument under Section E.1, the Examiner apparently does not deny that various aspects of the claim are missing from the Kim and Ansuini references and therefore no further discussion of the first basis is needed.

Under Section E.2, the Examiner merely repeats the same argument contained in the 3rd and non-final Official Action as his Examiner's Answer, i.e., arguing that “if the

Kim device is taken to not have a plurality of mutually inverted generally U-shaped bends, it would have been obvious to modify the Kim device to include such a configuration with the plural tracks of Kim, such as taught by Ansuini, in order to save space.”

However, as noted above, this does not meet the requirements of the Court of Appeals’ decision in *In re Rouffet*, nor the Patent Office position regarding the proper interpretation of the Supreme Court decision in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (S. Ct. 2007). The Supreme court held that “[t]o facilitate review [of the Examiner’s purported rationale for combining references], this analysis should be made explicit.” *Id.* at 1396.

The Supreme Court went on to follow the Court of Appeals for the Federal Circuit’s advice that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” (the Supreme Court quoting from the Court of Appeals for the Federal Circuit in *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006)).

Thus, the test of whether or not the Examiner has met his burden of articulating some rationale for combining references is simply not met in the Examiner’s Answer (or in the 3rd and non-final official action). Moreover, the Examiner apparently does not appreciate that the Ansuini sensor is an extremely complicated device aimed at making both simultaneous measurements of time averaged corrosion as well as instantaneous corrosion rates. The Kim sensor is a relatively simple resistive sensor. There is no

reason why one of ordinary skill in the art would pick and choose elements from these two very different devices, then to combine them in the manner of Appellants' claims.

The Examiner provides a simplistic argument that the combination would be motivated by a desire for "saving space," but he fails to appreciate that the Kim and Ansuini sensors are fabricated in entirely different ways and these different fabrication techniques would render it impossible to straightforwardly combine the teachings of those documents. For example, Ansuini is made by gluing a steel foil to a suitable backing and then using a photofabrication technique (Ansuini, column 5, line 10+). For the Ansuini sensor, where foil is relatively thick, it is necessary to make the resistive part long or else the resistance will be so small as to make it impossible to measure changes in resistance. The alternative, as pointed out in Ansuini at column 2, line 52, is to reduce the thickness of the strip. Kim uses a thin film technique to make his sensor and thus there is no need for long resistive strips with a serpentine path as disclosed in Ansuini.

Moreover, there is no particular need to "save space" on thin film corrosion sensors and thus the Examiner's suggestion of saving space as a motivation for combining portions of the two references is simply misplaced. The most pressing concern with respect to corrosion sensors is the need to ensure a sufficient lifetime of the sensor for it to be of use throughout the lifetime of the platform on which the sensor is applied. Aircraft lifetimes of 25 years imply that the corrosion sensors must be usable over a 25-year period.

The Kim sensors are a design applicable for oil industry sensors and lifetimes on the order of 50 years would be required. A sensor in which the tracks corrode through in

a few hours would simply be of no use. In the case of Kim, where the tracks to be made are of a serpentine shape, they would need to be made significantly thinner and thus would corrode through significantly faster, rendering the sensor useless. A person skilled in the art of thin film corrosion sensing would readily appreciate this and therefore would not seek to make the tracks in the Kim reference serpentine in nature.

As a result of the above, the Examiner has simply failed to meet his burden of providing the required “explicit” analysis by which one of ordinary skill in the art would pick and choose aspects of both the Kim and Ansuini references and then combine those aspects in the manner of Appellants’ independent claim 1 or claims dependent thereon. This failure demonstrates the Examiner’s failure to establish a *prima facie* case of obviousness.

In section E.3, Appellants merely point out that, even if the Examiner had set forth a *prima facie* case of obviousness (and this contention is disputed as noted above), the noted evidence that the cited references taught away from the claimed combination is evidence in rebuttal of the *prima facie* case. Appellants have identified portions of both references which would clearly lead one of ordinary skill in the art away from Appellants’ claimed combination of elements. Appellants have provided rebuttal evidence tending to demonstrate the non-obviousness of Appellants’ independent claim and claims dependent thereon.

As noted above, the Examiner essentially has failed to elaborate upon or respond to the arguments set forth in Appellants’ Appeal Brief, nor has he provided any additional basis for his rejection of the independent claim or claims dependent thereon under 35

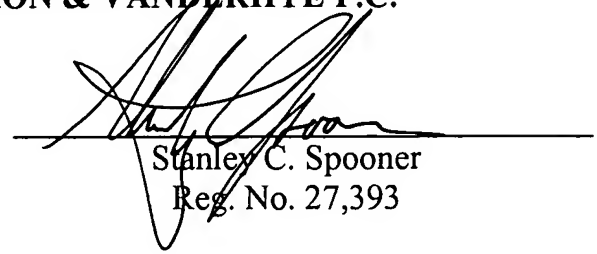
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USC §103. Thus, and in view of the above, the rejection of claims 1-22 under 35 USC §103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

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